

ON SOME JAVANESE COCCIDÆ: WITH DESCRIPTIONS OF NEW SPECIES.

BY E. ERNEST GREEN, F.E.S.,

Government Entomologist, Royal Botanic Gardens, Peradeniya, Ceylon.

The following notes are founded upon an interesting series of *Coccidæ* collected in June by Prof. A. Zimmermann, of the Botanic Gardens, Buitenzorg. Many of the species (and some of the genera) are new to science; others are representative partly of the Indian and partly of the Australian fauna; the remainder are cosmopolitan forms that have followed civilization throughout the world.

LECANIUM TENEBRICOPHILUM, *sp. nov.* (fig. 1).

Adult ♀, bright castaneous to dark brown; strongly convex; irregularly hemispherical, with posterior extremity abruptly depressed (fig. 1 *b*), the anal scales situate in the centre of this depressed area. Stigmatic clefts moderately deep; the spiracle impinging on the cleft (fig. 1 *c*). No stigmatic spines. Limbs small, but

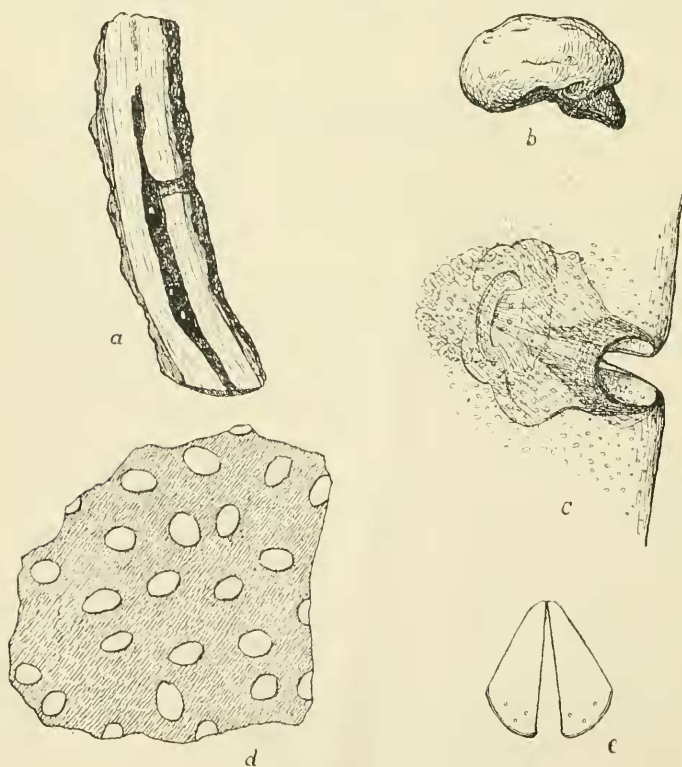


Fig. 1.

fully developed. Antenna with seven or eight joints, the former being probably

the normal number ; but there is usually a more or less complete subdivision of either the terminal or the penultimate joint. Some stout hairs at extremity. Formula very variable, no two examples agreeing ; 2nd usually longest, sometimes equal to 3rd ; 5th and 6th, or 6th and 7th shortest. Legs with a deep constriction near the middle of the tarsus, simulating a joint, a somewhat similar false joint being apparent near the base of the tibia. Foot with four digitules ; the unguals spatulate ; the tarsals fine knobbed hairs. Plates of anal opereculum (fig. 1 *e*) with inner edge longest ; outer edge shortest and rounded ; base straight, three-quarters the length of inner edge. (My examples are not in sufficiently good preservation to enable me to determine the number of hairs on the anal ring). Anal cleft rather more than one-quarter total length of insect. Margin with very minute inconspicuous simple hairs at considerable intervals. Derm thickly set with oval translucent pores, separate from each other by a little more than their longest diameter (fig. 1 *d*).

Length, 4 to 5 mm. ; breadth, 3 to 4 mm. ; height, averaging 3 mm.

Other stages unknown.

Habitat : Within the tunnels formed in branches of *Erythrina lithosperma* by some boring caterpillar or beetle (fig. 1 *a*).

The Coccids are entirely concealed, attached to the walls of the tunnel, sometimes at a distance of from 6 to 10 inches from the exit. Prof. Zimmermann informs me that they are always attended by ants. (Coll. Zimm., No. 1).

LECANIUM (SAISSETIA) HEMISPHERICUM, Targ.

On *Coffea arabica* (No. 20).

LECANIUM (EULECANIUM) PSIDII, Green.

On *Jambosa* sp. (No. 28).

A formal description of this species appears in Part III, "*Coccidæ* of Ceylon."

LECANIUM (PARALECANIUM) EXPANSUM, Green.

On Zingiberaceous plant (No. 25) and *Lepidadenia wightiana* (No. 95).

LECANIUM EXPANSUM, *var.* METALLICUM, *n. var.*

Differs from type in having a beautiful iridescent metallic sheen on dorsum of living insect, disappearing after treatment with potash. Margin closely stippled with dark opaque spots. On *Myristica fragrans* (No. 38).

LECANIUM EXPANSUM, *var.* JAVANICUM, *n. var.*

Differs from type in having a minute but regular dermal reticulation. On *Anomianthus heterocarpus* (No. 64).

LECANIUM EXPANSUM, *var. ROTUNDUM*, *n. var.*

Smaller than type and circular in outline. Margin stippled as in *metallicum*. On *Rhizophora mucronata* (No. 82).

LECANIUM (SAISSETIA) NIGRUM, Nietner.

On *Hevea brasiliensis* (No. 80).

LECANIUM (EUCALYMNATUS) TESSELLATUM, Sign.

These specimens agree with Signoret's type in having no median dorsal suture. But the median area is densely chitinous and the division may be merely obscured. On *Eriodendron anfractuosum* (No. 83).

LECANIUM (SAISSETIA) OLEÆ, Bern.

On *Erythrina lithosperma* (No. 99).

PULVINARIA MAXIMA, *sp. nov.* (fig. 2).

Dried examples pale fulvous, probably greenish in life. Ovisac profuse, white, flattish; sometimes extending to a length of 20 mm.

Adult ♀ irregularly oval; margins undulating; broadest across posterior half. Margin with a close fringe of stout spines (fig. 2 *a*), which, in all my examples, are irregularly truncate, as if broken,

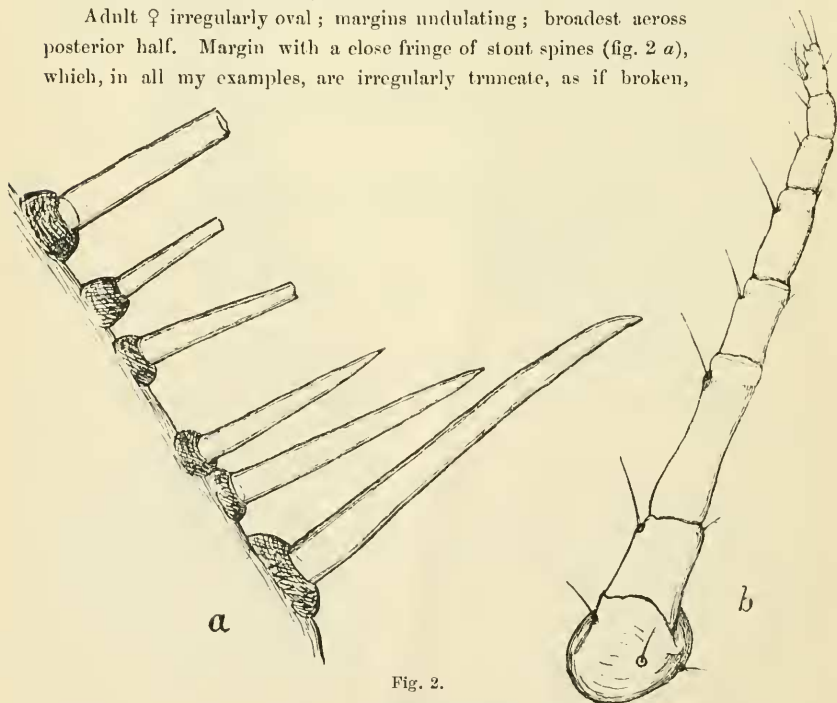


Fig. 2.

except at the stigmatic clefts, where they are longer and sharply pointed. Limbs well developed. Antenna (fig. 2 *b*) eight jointed, 3rd longest, 7th and 8th shortest.

Tarsus scarcely half length of tibia. Plates of anal opereulum rather narrow and acuminate; base and outer edge approximately equal; outer angle obtuse. Anal ring with six stout hairs. Derm closely set with large conspicuous oval or sub-circular translucent cells. Length, 6 to 9 mm.; breadth, 4 to 5.75 mm.

Habitat: On stems of *Erythrina lithosperma* (No. 22).

This insect is the giant of its kind, but is closely approached by *P. mammeæ*, Mask., which attains a length of nearly 8 mm. The present species resembles *mammeæ* in other characters, *e. g.*, the structure of the antennæ and legs; but Maskell makes no mention of a marginal fringe of hairs, nor of the cellular character of the derm. Maskell states that in *mammeæ* the tarsal digitules are wanting. In *maxima* they are long, stout and distinctly knobbed.

PULVINARIA PSIDII, Mask.

On *Coffea liberica* (No. 4) and *Ficus* sp. (No. 9).

CEROPLASTES CIRRHIPEDIFORMIS, Comstock.

On *Eugenia aquea* (No. 6).

The specimens to hand are not in very good condition, but all the characters, as far as they can be seen, correspond very closely to those of Comstock's species. The anal opereulum is situated on a prominent conical process. There are no marginal hairs, but at each stigmatic cleft is a group of about 25 conical spines, the extremities drawn out into sharp points (fig. 3). Comstock describes these spines



Fig. 3.

as arrow-shaped and constricted at the base. As pointed out in some "Observations on the genus *Ceroplastes*" (Ann. and Mag. Nat. Hist., Ser. 7, Vol. iv, September, 1899, pp. 190, 191), this stalked appearance is unreal, being produced by the sub-cutaneous tube leading inwards from the spines. There is a slight constriction at the base, but nothing that could be interpreted as pedicellate. In most of my specimens the very elongate 3rd joint of the antennæ shows an imperfect division at about one-third its length from the base.

CEROPLASTES VINSONII, Sign.

On *Hiptage laurifolia* (No. 54).

DIASPIS PENTAGONA, Targ.

On young plants of *Erythrina lithosperma* (No. 3) and on *Thea assamica* (No. 69).

DIASPIS ROSÆ, Bouché.

On *Rosa* sp. (No. 44).

ISCHNASPIS LONGIROSTRIS, Sign.

On stems and leaves of *Coffea liberica* (No. 5); on *Myristica fragrans* (No. 39); and on *Zalacca* sp. (No. 40).

PARLATORIA ZIZIPHUS, Lucas.

On *Citrus* sp. (No. 14).

PARLATORIA PROTEUS, Curtis.

On *Hevea brasiliensis* (No. 81).

ASPIDIOTUS (AONIDIELLA) AURANTII, Mask.

On *Citrus* sp. (No. 16); on *Camphora officinalis* (No. 55); and on *Cycas* sp. (No. 43).

ASPIDIOTUS CYANOPHYLLI, Sign.

On *Theobroma cacao* (No. 71).

ASPIDIOTUS DESTRUCTOR, Sign.

On *Bixa orellana* (No. 67); *Theobroma cacao* (No. 71); *Uncaria gambir*, (No. 88); *Vitis* (No. 91); *Cocos nucifera* (No. 102).

ASPIDIOTUS (CHRYSOMPHALUS) DICTYOSPERMI, Morg.

On *Diospyros* (No. 29); *Myristica fragrans* (No. 42); and *Palauquium* sp. (No. 48).

ASPIDIOTUS TRANSPARENS, Green.

On *Anomianthus heterocarpus* (No. 65); *Anona* sp. (No. 89); and *Hevea brasiliensis* (No. 21a).

ASPIDIOTUS (CHRYSOMPHALUS) FICUS, Ashm.

On *Croton* sp. (No. 103).

ASPIDIOTUS (PSEUDAONIDIA) CURCULIGINIS, *sp. nov.* (fig. 4).

Female puparium superficially resembling that of *Asp. rossi*. Elliptical, flat-tish; dark blackish-brown. Pellicles fulvous, slightly raised, with inconspicuous boss and concentric ring, surrounded by a thin whitish line. Inner surface paler brown; ventral scale persisting along the margins.

Length, 2 to 2.50 mm.; breadth, 1.25 to 1.50 mm.

Male puparium similar, but smaller; pellicle nearer the anterior extremity.

Length, 1.50 mm.; breadth, 0.80 mm.

Adult ♀ reddish-fulvous (dried examples). Form resembling *Asp. trilobiformis* or *A. theæ*, with a deep constriction between the pro- and meso-thoracic

segments; broadest across the meso-thorax; abdominal segments well defined and produced at the margins. Extremity of pygidium (fig. 4) rather truncate, with



Fig. 4.

eight lobes; the median pair large, stout and conspicuous, extremity pointed, edge slightly incised on each side near the point; the second and third pairs narrow and lanceolate, constricted at base; fourth pair short, stout, and with incised edges. Margin cristate beyond the lobes. Narrow fimbriate squames between the lobes. Margin somewhat incrassate, with numerous short thickened paraphyses. Median area of pygidium, from apex to beyond anal aperture, darker and more densely chitinous. Circumgenital glands in four groups, each with about twelve orifices. Anterior spiracles with a small group of parastigmatic glands, containing three or four orifices. Length, 1.25 mm.; breadth, 0.90 mm.

Adult ♂ not known.

Habitat: on both surfaces of leaves of *Curculigo recurvata*. Buitenzorg, Java (Coll. Zimm., No. 33).

Allied to *Asp. theæ* and *A. trilobitiformis*, but with no tessellated patch on pygidium.

LEPIDOSAPHES CORRUGATA, *sp. nov.*

Female puparium dull black, thick and opaque; pellicles reddish-fulvous, exposed. Form normal, widening very gradually behind; outline usually sinuous; somewhat flattened above, with many curved transverse corrugations. Ventral scale stout; persistent along the margin; usually interrupted along the median line. Length, 3 to 4.50 mm.; greatest breadth, 1 mm.

Male puparium not observed.

Adult ♀ of usual form; broadest across abdominal segments, which are moderately produced at the margins. Anterior spiracles with a small group of parastigmatic glands. Median lobes of pygidium conspicuous, bluntly pointed, with irregularly crenulate or dentate edges. First lateral lobes small, duplex, the inner lobule the larger. Other lobes wanting. The usual spiniform squames and marginal pores. Dorsal surface of pygidium with a conspicuous double series of oval pores extending on each side from level of anal aperture almost to margin, and two smaller series outside these. Circumgenital glands in five groups: median group with six to seven orifices; upper laterals, 9 to 10; lower lateral, 8 to 9.

Length, 1 to 1.25 mm.

Adult ♂ not known.

Habitat : on stem of *Coffea arabica*. Java (Coll. Zimm., No. 27). The puparia are usually concealed beneath the superficial corky growth, and probably owe their flattened form to this habit.

This species belongs to the group of which *M. pomorum* and *M. citricola* may be taken as types. The stout flattened and corrugated puparium and the conspicuous double series of dorsal pores on the pygidium of the ♀, will serve to distinguish the present species from its nearer allies.

(To be continued).

Odontæus mobilicornis, F., at Downham, Norfolk.—On July 13th, whilst moth catching, I took a fine male specimen of *Odontæus mobilicornis*, F., flying, just as it was dusk.—ROBERT S. SMITH, Junr., The Laurels, Downham : Aug. 7th, 1904.

[Many years ago Stephens recorded this species from Norfolk, so this capture is interesting as confirming his record.—W. W. F.].

Plagioderà versicolora, Laich., in abundance at Oxford.—This beetle is not usually regarded as at all common, and I never saw it alive until July 23rd last, when it occurred in such numbers as to be considered almost as a pest. I met with it on this year's shoots, growing up from the stumps that had been lopped in the previous winter, of a willow hedge bordering the footpath to South Hinksey, only just outside the city of Oxford. Here for about 200 yards it could be seen in profusion, often five or six together on a single leaf, and the ravages of the beetle were conspicuous at quite a long distance off. It was accompanied by *Phyllodecta vitellinæ*, L., and *Crepidodera chloris*, Foud., but both of these were in comparatively scanty numbers; its larvæ were also there, but not plentifully. I may add that I had passed the spot about three weeks previously, but had seen nothing of the *Plagioderà* in any stage, though I had swept the willows with my net. I shall be glad to distribute unset specimens of the beetle to any Coleopterist who may wish for them.—JAMES J. WALKER, "Aorangi," Lonsdale Rd., Summertown, Oxford : Aug. 8th, 1904.

Triplax ænea, Schall., and *T. russica*, L., at Gibside.—Early in the morning (about 5.30 a.m.) of July 8th, I found *Triplax ænea*, Schall., in some fungi growing on elm in Gibside. Returning with my friend Mr. Wallace on the evening of the 22nd, we shook some more fungi, and besides turning out several *T. ænea*, were lucky enough to come across *T. russica*, L., an insect hitherto unrecorded from the Northumberland and Durham district. On Saturday, the 24th, I examined this part of Gibside more closely, and soon found an elm overgrown with fungi to a height of about 20 feet, and not far from it a holly also overgrown; and made some observations, which may prove interesting.

T. ænea and *T. russica* occurred in almost equal numbers at the foot of the tree, whilst from a height of over four feet *T. ænea* had the advantage in numbers, and at a height of over eight feet there were scarcely three examples of *T. russica* to fifty *T. ænea*! What is the reason?